

**ABSTRACT**

Methods are disclosed for producing *in-situ* composite solders having a particulate intermetallic phase homogeneously distributed throughout the solder matrix. An eutectic solder is mixed with the components of the intermetallic phase, 5 melted and rapidly cooled to form the desired solder. *In-situ* composite solder alloys formed by the disclosed method provide greater solder joint strength and fatigue resistance.

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